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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
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DATE MAILED:

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/066/168

Applicant(s)

KATSUBE

Examiner

A. LORTUHA

Group Art Unit

1723

☒ Responsive to communication(s) filed on 4/24/98☐ This action is FINAL.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-4 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.☒ Claim(s) 1-4 is/are rejected.☐ Claim(s) \_\_\_\_\_ is/are objected to.☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.☐ The specification is objected to by the Examiner.☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been☐ received.☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3☐ Interview Summary, PTO-413☐ Notice of Draftsperson's Patent Drawing Review, PTO-948☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1723

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

2. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 93/07958 ('958).

Reference '958 discloses the hollow fiber membrane module including the container and the two hollow fiber elements arranged within the container, the feed tube surrounded by the hollow fibers the connecting tube, the permeate liquid discharge and non-permeate liquid discharge communicating between the container and the outer surface of each element and extending through the container (elements 20, 21, 40, 74, 76, 36, 52, 53, Fig. 5).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/07958 as applied to claim 1 discussed above, and further in view of Sekino et al (4,293,419) and Ethiene et al.(5,380,433). Regarding claim 2, reference '958 fails to disclose the hollow fiber membrane apparatus with an inner liquid receiving plate and the connecting tube for connecting the feed tube

Art Unit: 1723

of the second element. Reference '419 discloses a hollow fiber apparatus having at least two hollow fiber membrane modules and feeding central perforated tube provided with a dividing member (or plate) , and a connecting tube for passing retentate from one module to the feed central tube or core of the second module (Fig. 1, elements 11, 11', (a), (b)14, 8, 3, 6). It would have been obvious to one skilled in the pertinent art to provide a membrane module as disclosed by reference '958, with a separating plate and conduit connecting retentate from the first module to the second feed inlet of the second module, as suggested by reference '419, since both modules are similar except for the permeate collection and position of the feed inlet , which can be optionally be lateral or axially aligned. The distance of the discharge outlet from the opposite end of the module is not disclosed by the references disclosed above. Lateral removal of retentate is not disclosed. Reference '433 discloses hollow fiber membrane housing or container provided with outlet in communication with an space between the outside of the fibers and the container, disposed near the end of the module(Fig. 1, element 41), although a particular distance is not disclosed, it would have been obvious to one skilled in the pertinent art modify reference '958 to provide lateral discharge of retentate, and further alternatively provide the discharge at the end of the module. Selecting a particular distance it would have been an obvious choice depending on module size, membrane potting area or end plate thickness, etc.

6. Additional references cited are considered pertinent to Applicant 's disclosure.


Application/Control Number: 09/066,168

Page 4

Art Unit: 1723

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana Fortuna whose telephone number is (703) 308-3857.

Facsimile No. (703)308-3857.



ANA FORTUNA  
PRIMARY EXAMINER  
GROUP 1300

Ana Fortuna

March 8, 1999